

Release notes for ENDF/B Development n-096_Cm_244
evaluation



April 26, 2017

- groupie Errors:

1. Very small elastic cross section found
0: Small elastic

```
Multi-Group and Multi-Band Parameters from ENDF/B Data (GROUPIE 2015-2)
```

```
ENDF/B Input and Output Data Filenames
ENDFB.IN
ENDFB.OUT
... [97 more lines]
```

- fudge-4.0 Warnings:

1. Missing a channel with a particular angular momenta combination
resonances / resolved / MultiLevel_BreitWigner (Error # 0): missingResonanceChannel

```
WARNING: Missing a channel with angular momenta combination L = 0, J = 1.5 and S = 1.5 for "capture"
```

2. Potential scattering hasn't converted, you need more L's!
resonances / resolved (Error # 1): potentialScatteringNotConverged

```
WARNING: Potential scattering hasn't converged by L=0 at E=1000.0 eV, xs[0]/xs[0]=100.0% > 0.1%
```

3. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 0: total (Error # 0): CS Sum.

```
WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.87%
```

4. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 1 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'1 delayed'] + gamma [total fission] [nubar]): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

5. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 2 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'1 delayed'] + gamma [total fission] [nubar]): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (4.109962e-09) is too small
```

6. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 3 (total): / Form 'eval': / Component 0 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

7. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 3 (total): / Form 'eval': / Component 1 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

8. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 4 ($n + Cm244$): / Form 'eval': / Component 0 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

9. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 4 ($n + Cm244$): / Form 'eval': / Component 1 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

10. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 8 ($n[multiplicity: 'energyDependent', emissionMode: 'prompt'] + n[emissionMode: '1 delayed'] + gamma [total fission]$): / Form 'eval': / Component 1 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

11. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 9 ($n + (Cm244_e1 \rightarrow Cm244 + gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.060807e-09) is too small

12. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 11 ($n + (Cm244_e3 \rightarrow Cm244 + gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.917342e-09) is too small

13. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 12 ($n + (Cm244_e4 \rightarrow Cm244 + gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (2.698362e-09) is too small

14. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 13 ($n + (Cm244_e5 \rightarrow Cm244 + gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (4.732498e-10) is too small

15. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 14 ($n + (Cm244_e6 \rightarrow Cm244 + gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (8.124685e-09) is too small

16. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 15 ($n + (Cm244_e7 \rightarrow Cm244 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (5.972313e-10) is too small

17. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 17 ($n + (Cm244_e9 \rightarrow Cm244 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (3.024423e-09) is too small

18. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 18 ($n + (Cm244_e10 \rightarrow Cm244 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.112699e-09) is too small

19. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 19 ($n + (Cm244_e11 \rightarrow Cm244 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (5.003949e-09) is too small

20. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 20 ($n + (Cm244_c \rightarrow Cm244 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

21. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 21 ($Cm245 + \gamma$): / Form 'eval': / Component 0 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

22. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 21 ($Cm245 + \gamma$): / Form 'eval': / Component 1 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

23. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 22 ($n + Cm244$ [angular distribution]): / Form 'eval': (Error # 1): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

24. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 23 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'1 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

25. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 24 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'1 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

26. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 25 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'1 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

27. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 26 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'1 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

28. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 27 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'1 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

29. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 28 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'1 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

30. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 29 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'1 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

- fudge-4.0 Errors:

1. Energy range of data set does not match cross section range

$$\text{reaction label 12: } n + (\text{Cm244_c} \rightarrow \text{Cm244} + \text{gamma}) / \text{Product: Cm244_c / Decay}$$

$$\text{product: gamma_a / Multiplicity: (Error \# 0): Domain mismatch (a)}$$

WARNING: Domain doesn't match the cross section domain: (170000.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
2. Energy range of data set does not match cross section range

$$\text{reaction label 12: } n + (\text{Cm244_c} \rightarrow \text{Cm244} + \text{gamma}) / \text{Product: Cm244_c / Distribution: / uncorrelated - angular - isotropic: (Error \# 0): Domain mismatch (a)}$$

WARNING: Domain doesn't match the cross section domain: (170000.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
 WARNING: Domain doesn't match the cross section domain: (1300000.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
 WARNING: Domain doesn't match the cross section domain: (297435.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
 WARNING: Domain doesn't match the cross section domain: (400000.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
 ... plus 13 more instances of this message
3. Energy range of data set does not match cross section range

$$\text{reaction label 12: } n + (\text{Cm244_c} \rightarrow \text{Cm244} + \text{gamma}) / \text{Product: Cm244_c / Decay}$$

$$\text{product: gamma_b / Multiplicity: (Error \# 0): Domain mismatch (a)}$$

WARNING: Domain doesn't match the cross section domain: (1300000.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
4. Energy range of data set does not match cross section range

$$\text{reaction label 12: } n + (\text{Cm244_c} \rightarrow \text{Cm244} + \text{gamma}) / \text{Product: Cm244_c / Decay}$$

$$\text{product: gamma_c / Multiplicity: (Error \# 0): Domain mismatch (a)}$$

WARNING: Domain doesn't match the cross section domain: (297435.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
5. Energy range of data set does not match cross section range

$$\text{reaction label 12: } n + (\text{Cm244_c} \rightarrow \text{Cm244} + \text{gamma}) / \text{Product: Cm244_c / Decay}$$

$$\text{product: gamma_d / Multiplicity: (Error \# 0): Domain mismatch (a)}$$

WARNING: Domain doesn't match the cross section domain: (400000.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
6. Energy range of data set does not match cross section range

$$\text{reaction label 12: } n + (\text{Cm244_c} \rightarrow \text{Cm244} + \text{gamma}) / \text{Product: Cm244_c / Decay}$$

$$\text{product: gamma_e / Multiplicity: (Error \# 0): Domain mismatch (a)}$$

WARNING: Domain doesn't match the cross section domain: (700000.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
7. Energy range of data set does not match cross section range

$$\text{reaction label 12: } n + (\text{Cm244_c} \rightarrow \text{Cm244} + \text{gamma}) / \text{Product: Cm244_c / Decay}$$

$$\text{product: gamma_f / Multiplicity: (Error \# 0): Domain mismatch (a)}$$

WARNING: Domain doesn't match the cross section domain: (1300000.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
8. Energy range of data set does not match cross section range

$$\text{reaction label 12: } n + (\text{Cm244_c} \rightarrow \text{Cm244} + \text{gamma}) / \text{Product: Cm244_c / Decay}$$

$$\text{product: gamma_g / Multiplicity: (Error \# 0): Domain mismatch (a)}$$

WARNING: Domain doesn't match the cross section domain: (1300000.0 -> 20000000.0) vs (115953.0 -> 20000000.0)

9. Energy range of data set does not match cross section range
reaction label 12: n + (Cm244_c ->Cm244 + gamma) / Product: Cm244_c / Decay
product: gamma_h / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (1088660.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
10. Energy range of data set does not match cross section range
reaction label 12: n + (Cm244_c ->Cm244 + gamma) / Product: Cm244_c / Decay
product: gamma_i / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (1300000.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
11. Energy range of data set does not match cross section range
reaction label 12: n + (Cm244_c ->Cm244 + gamma) / Product: Cm244_c / Decay
product: gamma_j / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (1088660.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
12. Energy range of data set does not match cross section range
reaction label 12: n + (Cm244_c ->Cm244 + gamma) / Product: Cm244_c / Decay
product: gamma_k / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (1110480.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
13. Energy range of data set does not match cross section range
reaction label 12: n + (Cm244_c ->Cm244 + gamma) / Product: Cm244_c / Decay
product: gamma_l / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (1300000.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
14. Energy range of data set does not match cross section range
reaction label 12: n + (Cm244_c ->Cm244 + gamma) / Product: Cm244_c / Decay
product: gamma_m / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (1110480.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
15. Energy range of data set does not match cross section range
reaction label 12: n + (Cm244_c ->Cm244 + gamma) / Product: Cm244_c / Decay
product: gamma_n / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (1300000.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
16. Energy range of data set does not match cross section range
reaction label 12: n + (Cm244_c ->Cm244 + gamma) / Product: Cm244_c / Decay
product: gamma_o / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (1300000.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
17. Energy range of data set does not match cross section range
reaction label 12: n + (Cm244_c ->Cm244 + gamma) / Product: Cm244_c / Decay
product: gamma_p / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (1300000.0 -> 20000000.0) vs (115953.0 -> 20000000.0)

18. Energy range of data set does not match cross section range
reaction label 12: n + (Cm244_c -> Cm244 + gamma) / Product: Cm244_c / Decay product: gamma_q / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (1300000.0 -> 20000000.0) vs (115953.0 -> 20000000.0)
19. Calculated and tabulated Q values disagree.
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma (Error # 0): Q mismatch
- WARNING: Calculated and tabulated Q-values disagree: -6929410.106536865 eV vs -6801260. eV!
20. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_a / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)
21. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_a / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)
22. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_b / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)
23. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_b / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)
24. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_c / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)
25. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)
26. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_d / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

27. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_d / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

28. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_e / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

29. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_e / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

30. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_f / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

31. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_f / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

32. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_g / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

33. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_g / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

34. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_h / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

35. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_h / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

36. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_i / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

37. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_i / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

38. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_j / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

39. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_j / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

40. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_k / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

41. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_k / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

42. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_l / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

43. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_l / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

44. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_m / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)

45. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_m / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)
46. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_n / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)
47. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_n / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)
48. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_o / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)
49. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'2'] + Cm243 + gamma / Product: gamma_o / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (6829370.0 -> 20000000.0)
50. Calculated and tabulated Q values disagree.
reaction label 14: n[multiplicity:'3'] + Cm242 + gamma (Error # 0): Q mismatch
- WARNING: Calculated and tabulated Q-values disagree: -12622353.10076904 eV vs -1.24942e7 eV!
51. Energy range of data set does not match cross section range
reaction label 14: n[multiplicity:'3'] + Cm242 + gamma / Product: gamma_a / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12545800.0 -> 20000000.0)
52. Energy range of data set does not match cross section range
reaction label 14: n[multiplicity:'3'] + Cm242 + gamma / Product: gamma_a / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12545800.0 -> 20000000.0)
53. Energy range of data set does not match cross section range
reaction label 14: n[multiplicity:'3'] + Cm242 + gamma / Product: gamma_b / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12545800.0 -> 20000000.0)

54. Energy range of data set does not match cross section range
reaction label 14: n[multiplicity:'3'] + Cm242 + gamma / Product: gamma_b / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12545800.0 -> 20000000.0)

55. Energy range of data set does not match cross section range
reaction label 14: n[multiplicity:'3'] + Cm242 + gamma / Product: gamma_c / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12545800.0 -> 20000000.0)

56. Energy range of data set does not match cross section range
reaction label 14: n[multiplicity:'3'] + Cm242 + gamma / Product: gamma_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12545800.0 -> 20000000.0)

57. Calculated and tabulated Q values disagree.
reaction label 16: Cm245 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 5392110.419952393 eV vs 5520260. eV!

58. Multiplicity does not match sum of linked product multiplicities!
multiplicitySum label 14: n + (Cm244_c -> Cm244 + gamma) total gamma multiplicity (Error # 0): summedMultiplicityMismatch

WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 42.33%

59. Multiplicity does not match sum of linked product multiplicities!
multiplicitySum label 15: n[multiplicity:'2'] + Cm243 + gamma total gamma multiplicity (Error # 0): summedMultiplicityMismatch

WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 98.59%

60. Multiplicity does not match sum of linked product multiplicities!
multiplicitySum label 16: n[multiplicity:'3'] + Cm242 + gamma total gamma multiplicity (Error # 0): summedMultiplicityMismatch

WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 99.98%

61. Calculated and tabulated Q values disagree.
fissionComponent label 0: /reactionSuite/fissionComponents/fissionComponent[@label='0'] (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 228282438331.0288 eV vs 2.08376e8 eV!

62. Calculated and tabulated Q values disagree.
fissionComponent label 1: /reactionSuite/fissionComponents/fissionComponent[@label='1'] (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 228282438331.0288 eV vs 2.08376e8 eV!

63. Calculated and tabulated Q values disagree.
fissionComponent label 2: /reactionSuite/fissionComponents/fissionComponent[@label='2']
(Error # 0): Q mismatch
- ```
WARNING: Calculated and tabulated Q-values disagree: 228282438331.0288 eV vs 2.08376e8 eV!
```
64. Calculated and tabulated Q values disagree.  
*fissionComponent label 3: /reactionSuite/fissionComponents/fissionComponent[@label='3']*  
*(Error # 0): Q mismatch*
- ```
WARNING: Calculated and tabulated Q-values disagree: 228282438331.0288 eV vs 2.08376e8 eV!
```
65. A covariance matrix was not positive semi-definite, so it has negative eigenvalues.
Section 22 (n + Cm244 [angular distribution]): /Form 'eval': /LegendreLValue L=1
vs 1 (Error # 0): Bad evs

```
WARNING: 9 negative eigenvalues! Worst case = -1.486100e-05
```

- njoy2012 Warnings:

1. In some evaluations, the partial fission reactions MT=19, 20, 21, and 38 are given in File 3, but no corresponding distributions are given. In these cases, it is assumed that MT=18 should be used for the fission neutron distributions.
heatr...prompt kerma (0): HEATR/hinit (3)

```
---message from hinit---mt19 has no spectrum
mt18 spectrum will be used.
```

2. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (1): HEATR/hinit (4)

```
---message from hinit---mf6, mt 16 does not give recoil za= 96243
one-particle recoil approx. used.
```

3. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (2): HEATR/hinit (4)

```
---message from hinit---mf6, mt 17 does not give recoil za= 96242
one-particle recoil approx. used.
```

4. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (3): HEATR/hinit (4)

```
---message from hinit---mf6, mt 51 does not give recoil za= 96244
one-particle recoil approx. used.
```

5. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (4): HEATR/hinit (4)

```
---message from hinit---mf6, mt 52 does not give recoil za= 96244
one-particle recoil approx. used.
```

6. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (5): HEATR/hinit (4)

---message from hinit---mf6, mt 53 does not give recoil za= 96244
one-particle recoil approx. used.

7. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (6): HEATR/hinit (4)

---message from hinit---mf6, mt 54 does not give recoil za= 96244
one-particle recoil approx. used.

8. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (7): HEATR/hinit (4)

---message from hinit---mf6, mt 55 does not give recoil za= 96244
one-particle recoil approx. used.

9. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (8): HEATR/hinit (4)

---message from hinit---mf6, mt 56 does not give recoil za= 96244
one-particle recoil approx. used.

10. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (9): HEATR/hinit (4)

---message from hinit---mf6, mt 57 does not give recoil za= 96244
one-particle recoil approx. used.

11. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (10): HEATR/hinit (4)

---message from hinit---mf6, mt 58 does not give recoil za= 96244
one-particle recoil approx. used.

12. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (11): HEATR/hinit (4)

---message from hinit---mf6, mt 59 does not give recoil za= 96244
one-particle recoil approx. used.

13. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (12): HEATR/hinit (4)

---message from hinit---mf6, mt 60 does not give recoil za= 96244
one-particle recoil approx. used.

14. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (13): HEATR/hinit (4)

---message from hinit---mf6, mt 61 does not give recoil za= 96244
one-particle recoil approx. used.

15. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (14): HEATR/hinit (4)

---message from hinit---mf6, mt 91 does not give recoil za= 96244
one-particle recoil approx. used.

16. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (15): HEATR/hinit (4)

```
---message from hinit---mf6, mt102 does not give recoil za= 96245
      photon momentum recoil used.
```

17. There is a problem with the fission energy release.
heatr...prompt kerma (16): HEATR/nheat (3)

```
---message from nheat---changed q from 2.083760E+08 to 1.986300E+08
      for mt 18
```